

Serial No. 09/695,951

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Attorney Docket No. 97309.00045

Amendments to the claims:

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1. (Currently amended) A wood cutting band saw blade that when cutting wood produces saw dust and forms a kerf, comprising:

a cutting edge defined by a plurality of teeth spaced relative to each other, and a back edge located on an opposite side of the band saw blade relative to the cutting edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, and a shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade, wherein at least a portion of the shelf is oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade.

2. (Currently amended) The band saw blade of claim 1 wherein:

each of the set teeth comprises a relief surface and a cutting surface, the relief surface extending from one side of the tip in a direction opposite that of movement of the band saw blade and terminating at one end of an intermediate surface, and the cutting surface extending from another side of the tip; and

the shelf comprises a shelf surface extending from the cutting surface and terminating at another end of the intermediate surface.

3. (Currently amended) ~~The band saw blade of claim 2~~ A wood cutting band saw blade that when cutting wood produces saw dust and forms a kerf, comprising:

a cutting edge defined by a plurality of teeth spaced relative to each other, and a back edge located on an opposite side of the band saw blade relative to the cutting edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, and a shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade, wherein:

each of the set teeth has a dimension (S1) defined as the distance between the tip and the shelf of the respective tooth;

each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and

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a ratio of S1/B is within the range of approximately [[0.25]] 1/4 to approximately [[0.75]]
3/4.

4. (Original) The band saw blade of claim 3 wherein the ratio of S1/B is approximately .45.

5. (Original) The band saw blade of claim 2 wherein the shelf surface terminates in a shelf tip.

6. (Canceled)

7. (Currently amended) The band saw blade of claim 3 wherein:
each of the teeth [[are]] is set at an angle which is in the range of between approximately 1° and approximately 15° with respect to a transverse axis of the band saw blade; and
the dimension (S1) is within the range of approximately .06 inch to approximately .12 inch.

8. (Original) The band saw blade of claim 7 wherein the dimension (S1) is approximately .09 inch.

9. (Previously presented) The band saw blade of claim 2 wherein a length (L1) of the shelf surface defined between the cutting surface and the intermediate surface is within the range of approximately .06 inch to approximately .1 inch.

10. (Original) The band saw blade of claim 1 wherein:
the shelf surface is generally planar and is disposed at an angle (A1) that is within the range of approximately 4° to approximately 10° relative to the back edge of the band saw blade.

11. (Original) The band saw blade of claim 10 wherein the angle (A1) is approximately 7°.

12. (Currently amended) A wood cutting band saw blade that when cutting wood produces saw dust and forms a kerf, comprising:

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a cutting edge defined by a plurality of teeth spaced relative to each other, and a back edge located on an opposite side of the band saw blade relative to the cutting edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, and a shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade; wherein

each of the set [[of]] teeth comprise a relief surface and a cutting surface, the relief surface extending from one side of the tip in a direction opposite that of the movement of the band saw blade and terminating at one end of an intermediate surface, and the cutting surface extending from another side of the tip;

the shelf comprises a shelf surface extending from the cutting surface and terminating at another end of the intermediate surface; and

the shelf surface comprises a first portion that is generally parallel to the back edge and a second portion that is disposed at an acute angle (A2) relative to the back edge.

13. (Original) The band saw blade of claim 12 wherein the angle (A2) is within the range of approximately 10° to approximately 20°.

14. (Previously presented) The band saw blade of claim 12 wherein:

the second portion comprises about one third of the length of the shelf surface; and the angle (A2) is approximately 15°.

15-20. (Canceled)

21. (Original) The band saw blade of claim 1 wherein at least one tooth comprises a relief portion extending from the tip and having a relief angle (RA) within the range of approximately 0° to approximately 2°.

22. (Previously presented) The band saw blade of claim 21 wherein the relief portion also defines a tangential angle (TA) within the range of approximately 3° to approximately 6° with respect to the side of the blade body.

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23. (Currently amended) The band saw blade of claim 3 wherein:
the plurality of set teeth each comprises a second shelf;
each second shelf comprises a second shelf surface, and each second shelf defines a dimension (S2) extending between the tip of the respective tooth and the second shelf.

24. (Previously Amended) The band saw blade of claim 23 wherein S2=(B+S1)/2 and S1 is within the range of between approximately .13 inch and approximately .16 inch.

25. (Original) The band saw blade of claim 9 wherein:
each of the plurality of set teeth comprises a second shelf; and a length (L2) of each second shelf surface is within the range of approximately 70% to approximately 90% of (L1).

26. (Original) The band saw blade of claim 25 wherein the length (L2) of the each second shelf is approximately 80% of (L1).

27. (Currently amended) A wood cutting band saw blade ~~having a lateral surface and generating that generates~~ dust during cutting of wood, the band saw blade comprising:
a base having a back edge;
a cutting edge defined by a plurality of teeth spaced relative to each other and being located on an opposite side of the band saw blade relative to the back edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, a dust gap extending approximately between an outer lateral point of the tip and a lateral surface of the base, and means including at least a portion thereof oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade, and located between the tip of each set tooth and the bend plane for reducing the quantity of dust passing through the dust gap and accumulating on the band saw blade.

28. (Original) The band saw blade of claim 27 wherein the means for reducing the quantity of dust comprises at least one shelf.

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29. (Original) The band saw blade of claim 28 wherein the means for reducing the quantity of dust further comprises a relief portion extending from the tip of a set tooth at an acute angle to a transverse axis of the saw blade.

30. (Currently amended) The band saw blade of claim 28 wherein:

each of the set teeth comprises a relief surface and a cutting surface, the relief surface extending from one side of the tip in a direction opposite that of movement of the band saw blade and terminating at one end of an intermediate surface, and the cutting surface extending from another side of the tip; and

the shelf comprises a shelf surface extending from the cutting surface and terminating at another end of the intermediate surface.

31. (Currently amended) ~~The band saw blade of claim 30-A wood cutting band saw blade that generates dust during cutting of wood, the band saw blade comprising:~~

a base having a back edge;
a cutting edge defined by a plurality of teeth spaced relative to each other and being located on an opposite side of the band saw blade relative to the back edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, and a shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade, wherein:

each of the set teeth has a dimension (S1) defined as the distance between the tip and the shelf said means of the respective tooth;

each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and

a ratio of S1/B is within the range of approximately [[0.25]] 1/4 to approximately [[0.75]] 3/4.

32. (Previously presented) The band saw blade of claim 31 wherein:

a plurality of set teeth each comprise a second shelf;

each second shelf comprises a second shelf surface, and each second shelf defines a dimension (S2) extending between the tip of the respective tooth and the second shelf.

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33. (Previously presented) The band saw blade of claim 32 wherein $S2=(B+S1)/2$ and $S1$ is within the range of between approximately .13 inch and approximately .16 inch.

34. (Currently amended) A wood cutting band saw blade ~~having a lateral surface and generating that generates~~ dust during cutting of wood, the band saw blade comprising:

a base having a back edge;
a cutting edge defined by a plurality of teeth spaced relative to each other and being located on an opposite side of the band saw blade relative to the back edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, a dust gap dimension extending approximately between an outer lateral point of the tip and a lateral surface of the base; and

means including at least a portion thereof oriented at an angle of at least about 90° relative to a back edge portion of the blade in a cutting direction of the blade, and located at least partially between the tip and the bend plane for effectively reducing the dust gap dimension.

35. (Original) The band saw blade of claim 34 wherein the means for effectively reducing the dust gap dimension comprise at least one shelf.

36. (Previously presented) The band saw blade of claim 35 wherein the means for effectively reducing the dust gap dimension further comprises a relief portion extending from the tip of the respective set tooth at an acute angle to a transverse axis of the saw blade.

37. (Currently amended) The band saw blade of claim 35 wherein:
each of the set teeth comprises a relief surface and a cutting surface, the relief surface extending from one side of the tip in a direction opposite that of movement of the band saw blade and terminating at one end of an intermediate surface, and the cutting surface extending from another side of the tip; and

the shelf comprises a shelf surface extending from the cutting surface and terminating at another end of the intermediate surface.

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38. (Currently amended) The band saw blade of claim 37 A wood cutting band saw blade that generates dust during cutting of wood, the band saw blade comprising:

a base having a back edge;
a cutting edge defined by a plurality of teeth spaced relative to each other and being located on an opposite side of the band saw blade relative to the back edge, the plurality of teeth comprising a plurality of set teeth, each set tooth defining a tip, a bend plane, and a shelf located at least partially between the tip and the bend plane for reducing saw dust passing to the kerf and accumulating on the band saw blade, wherein:

each of the set teeth has a dimension (S1) defined as the distance between the tip and the shelf of the respective tooth;

each of the set teeth has a dimension (B) defined as the distance between the tip and the bend plane of the respective tooth; and

a ratio of S1/B is within the range of approximately [[0.25]] 1/4 to approximately [[0.75]] 3/4.

39. (Previously presented) The band saw blade of claim 38 wherein:
a plurality of set teeth each comprise a second shelf;
each second shelf comprises a second shelf surface, and each second shelf defines a dimension (S2) extending between the tip of the respective tooth and the second shelf.

40. (Previously Amended) The band saw blade of claim 39 wherein $S2=(B+S1)/2$ and S1 is within the range of between approximately .13 inch and approximately .16 inch.

41. (Withdrawn) The band saw blade of claim 1 wherein the plurality of teeth further comprise a

plurality of unset teeth and wherein:

the plurality of teeth have a repeating pattern of one unset tooth and four set teeth; and the set teeth are alternately set in directions on opposing sides of the cutting edge.

42. (Withdrawn) The band saw blade of claim 2 wherein the intermediate surface comprises a curvilinear base surface that defines a gullet.

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43. (Withdrawn) The band saw blade of claim 42 further comprising at least one bump portion extending outwardly from a surface of each gullet.

44. (Withdrawn) The band saw blade of claim 43 wherein the at least one bump portion comprises a bump portion extending outwardly from a first side surface and a second side surface of each gullet.

45. (Withdrawn) The band saw blade of claim 43 wherein the at least one bump portion has a height (H) within the range of approximately .04 to approximately .06 inch from the curvilinear base surface.

46. (Withdrawn) The band saw blade of claim 45 wherein the bump portion has a lateral width (W) as measured from a side surface of a base of the band saw blade that is within the range of approximately .005 inch to approximately .015 inch.

47. (Withdrawn) The band saw blade of claim 42 wherein the gullet has a depth (D) as measured from the tip of a tooth and the dimension (S1) is approximately one third of (D).

48. (Currently amended) The band saw blade of claim 27 wherein the means for reducing the quantity of dust passing through the dust gap and accumulating on the band saw blade includes a relief portion defining a substantially flat surface formed on an upper corner of a respective tooth on an outer side of the tooth-facing a ~~respective~~ ~~kerf~~ wall, wherein the relief portion extends between the shelf and tip of the respective tooth and is oriented at an acute angle with respect to a remaining portion of the respective side of the tooth for reducing an effective dust gap of the tooth.

49 (Currently amended) The band saw blade as defined in claim [[49]] 48 wherein the relief portion is oriented at an angle within the range of approximately 0° and approximately 2° with respect to a plane defined by a side of an unset tooth.